

# Synthesis of esters derived from 2,3,4-tri-*O*-benzyl- $\alpha$ -D-methylglucoside

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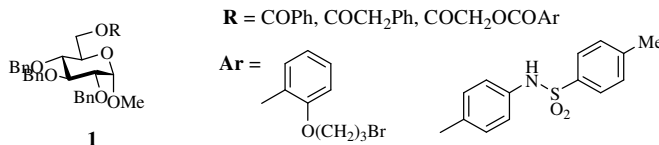
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Carbohydrates and glycoconjugates are involved in many normal and pathologic biological processes including cellular recognition, tumour metastasis, bacterial and viral infections.<sup>1</sup> The biological activity of carbohydrates depends generally on their ability to bind to specific receptors namely those containing *O*-sulfate esters. These carbohydrate derivatives occur widely in nature and play an essential role in many biological processes.<sup>2</sup> The regiospecific synthesis of sugar esters is a difficult and challenging task. One approach described in the literature involves sugar derivatives soluble in organic media, namely the esterification of methyl glucosides.<sup>3</sup>

In this communication we discuss the synthesis of a set of esters obtained from the D-glucose derivative **1** (R=H) by reaction with several carboxylic acids: benzoic, phenylacetic, acetylsalicylic (commercially available), 2-(3-bromopropoxy)benzoic acid and 4-(toluene-4-sulfonylamino)benzoic acid. Details on the synthesis and characterization of the final compounds will be presented.



**Acknowledgements:** We gratefully acknowledge the FCT (Fundação para a Ciência e Tecnologia) and FEDER for financial support. The Bruker Avance III 400 spectrometer is part of the National NMR network and was purchased under the framework of the National Programme for Scientific Re-equipment, contract REDE/1517/RMN/2005, with funds from POCI 2010 (FEDER) and (FCT). We are also grateful for research grant VZ MSM-0021627501, Czech Republic. We thank Ms. E. Pinto for recording NMR spectra and for performing elemental analyses.

## References

- [1] Oliveira, R. N.; Sinou, D.; Srivastava, R. J. *J. Carbohydrate Chem.*, 2006, (25), 407.
- [2] Pole, A. R. *Biochem. J.* **1986**, 236, 1; Ruoslahti, E. *J. Biol. Chem.* 1989, (264), 13369.
- [3] Redmann, I.; Pina, M.; Guyot, B.; Blaise, P.; Farines, M.; Graille, J. *Carbohydrate Res.* 1997, (300), 103 and references cited therein.